

## Section 3.9

# Derivatives of Exponential and Logarithmic Functions

$$\lim_{h \rightarrow 0} \frac{e^h - 1}{h} = 1$$

**Find the derivative of  $e^x$**

$$\frac{d}{dx} e^x = e^x$$

**If  $u$  is a differentiable function of  $x$ , then we have**

$$\frac{d}{dx} e^u = e^u \frac{du}{dx}$$